

DOCUMENT MODIFICATION REQUEST (DMR)

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Refer to 1-A01-PPG-001 for Processing Instructions
Print or Type All Information (Except Signatures)

1 Date
5/13/94

25
DMR No 94-DMR-001007 *lme*
5/23/94

2 Existing Document Number/Revision 5-21000-OPS-GT 1/Rev 2			3 New Document Number or Document Number if it is to be changed with this Revision N/A		
4 Originator's Name/Phone/Page/Location D Yashan/3692/D1388/7893A			5 Document Title Logging Alluvial and Bedrock Material		
6 Document Type <input checked="" type="checkbox"/> Procedure <input type="checkbox"/> Other _____		7 Document Modification Type (Check only one) <input type="checkbox"/> New <input type="checkbox"/> Revision <input checked="" type="checkbox"/> Intent Change <input type="checkbox"/> Nonintent Change <input type="checkbox"/> Editorial Correction <input type="checkbox"/> Cancellation			
8 Item	9 Page	10 Step	11 Proposed Modifications		
			LIMITED SCOPE This DMR is limited to the Dam Upgrades Project		
1	7 of 34	Section 5 1 1	Add the following sentence at the end of paragraph 2 "However, for geotechnical operations, the engineering properties of the material are very important Therefore, a specialized logging form will be used (Form GT 1C, Borehole Log for Geotechnical Operations) during geotechnical drilling operations "		
2	34 of 34	Section 7 0	Add at the end of the first sentence " or on the Borehole Log for Geotechnical Operations Form (Form GT 1C) "		
3	--	--	Insert Form GT 1C, Borehole Log for Geotechnical Operations, after Form GT 1B		
2 Justification (Reason for Modification EJO# TP# etc)					
1, 2 and 3					
A new logging form was needed to record engineering properties, which do not appear on the existing borehole log (Form GT-1A)					
If modification is for a new procedure or a revision, list occurring disciplines in Block 13 and enter N/A in Blocks 14 and 15 If modification is for any type of change or a cancellation, organizations are listed in Block 13 then Concurror prints and signs in Block 14, and dates in Block 15					
13 Organization	14 Print and Sign (if applicable)		15 Date (if applicable)		
SME	C Dodge		5-24-94		
EQS	M Brooks (RR)		5-24-94		
16 Originator's Supervisor (print/sign/date) S Marshall <i>ABrown for S.A Marshall</i>					
17 Assigned SME/Phone/Page/Location C Dodge/8536/4008/080-622		18 Cost Center 0202	19 Charge Number ENV-GT	20 Requested Completion Date 5/23/94	21 Effective Date 06/01/94 <i>RR</i>
22 Accelerated Review? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		23 ORC Review ORC Review Not Required, This Nonintent Change is being processed as an Intent Change to expedite the DMR process			
24 Responsible Manager (print, sign, date) Carol Bicher <i>CRB</i> 5-24-94					

REVIEWED FOR CLASSIFICATION/UCN

BY NA
DATE NA

ADMIN RECORD

DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R B HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991

LOGGING ALLUVIAL AND BEDROCK MATERIAL

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laboratory analyses, are not included in this SOP because they are neither practical to do in the field nor appropriate to geologic logging. A reprint of the U S C S is enclosed in Appendix GT 1A.

5.1.1 Basis of Classification

The U S C S historically has been used to classify "soils" based on their textural properties, liquid limit, and organic content. In the past, the term "soil" has been used by engineers as a catchall term that includes all unconsolidated material. Because engineers are concerned with how the soil behaves as a construction material, this all-inclusive approach has served them quite well.

However, in this SOP, the U S C S will be applied only to alluvium, colluvium, fill, and agronomic soils. This has been done to separate unconsolidated cover material from bedrock that has well-defined sedimentologic and depositional patterns, regardless of the degree to which the bedrock has been weathered. In the RFP area, it is more important to determine the possible paths of groundwater movement based on lithologic variability and geologic processes than it is to determine the engineering properties of weathered bedrock based on its physical behavior. However, for geotechnical operations, the engineering properties of the material are very important. Therefore, a specialized logging form will be used (Form GT 1C, Borehole Log for Geotechnical Operations) during geotechnical drilling operations.

5.1.2 Texture

5.1.2.1 Grain Size Scale

The U S C S grain size scale is divided into four main categories: (1) cobbles, (2) gravel, (3) sand, and (4) fines. The gravel, sand, and fines are subdivided into coarse and fine gravel, coarse, medium, and fine sand, and silt and clay.

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Table GT 1-1 is a summary of the U S C S grain size scale as well as the Wentworth, Atterberg, and U S Department of Agriculture grain size scales (Krumbein and Pettijohn 1966, and Compton 1962) In this SOP, the U S C S grain size scale is used when logging alluvium, colluvium, fill, and agronomic soils, whereas the Wentworth scale is used for logging bedrock`

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5.2 11 Moisture Content

The core will be described as dry, moist, or saturated, and the depth to the top of the saturated interval will be recorded. If a static water level can be measured, it will be noted. The moisture content and static water level (if present) will be recorded in the field on the back of the core logging form. The core logger will include this information in the core description.

5.2 12 Lithologic Description

Generally, lithologic descriptions should be made in the following order, or in an order that is comprehensive and includes all of the following descriptions in a logical or applicable sequence.

- Top of bedrock, if present
- Main rock type with modifiers
- Color
- Grain size
- Degree of sorting
- Degree of rounding
- Porosity
- Cement
- Friability
- Composition
- Bedding and internal structure
- Fractures and slickensides
- Moisture content

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- Sample number
- Depth
- Purpose
- Date
- Company

This information will be marked on the wood block with a black waterproof (permanent) marker

6.2.6 Logging Deliverables

Immediately after all lithologic core data and borehole/well data for a boring has been recorded on Logging Form GT 1A, the core logger will contact the appropriate EG&G oversight personnel to arrange for core log QC and sign off by an approved EG&G geologist. The EG&G geologist responsible for the core log QC signoff will visually inspect the core against the core log to assure that the logger is in compliance with the core logging procedures as specified in Section 5.2.12. The EG&G geologist may request additional comments be incorporated into the description, as deemed essential to the core description, or request check sieve analysis or other procedures to confirm the description of the core intervals in question. All data will then be entered into electronic format using the EG&G within three weeks of the sign off date. EG&G personnel will inspect the draft copies, and if necessary will stipulate changes. The subcontractor will make changes within a week of receipt and will deliver a second draft log in both hard copy and digital format.

Final logs and core photographs will be delivered to EG&G at a time specified by the EG&G contract or project manager. All final logs and photographs will be delivered in the EG&G standard format.

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6.3 CORE BOXES

The core boxes will be similar to the boxes described in Subsection 6.1 above. Each core box and lid will be marked with the following information:

- Well name
- Depth interval
- Date
- Project name
- Well site geologist's initials
- Logger's initials (after logging is completed)
- Box number and the total number of boxes
- Appropriate hazardous waste labels

After samples have been scanned as discussed in Subsection 6.2.1, the core will be containerized. Radiation and volatile organic analysis (VOA) readings will be written on the tops of the core boxes. Sections of the core suspected of containing radioactive and/or hazardous substances will be removed, segregated by their potential contaminant characterization, and placed in core boxes designated for potentially contaminated core. The remaining core will then be placed in separate core boxes. Wood blocks will be placed within the core boxes to indicate the position where

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potentially contaminated core sections were removed. Blocks will be marked with the interval of the core section removed and where the section can be located.

The core boxes will be closed and secured in a manner such that core will not be disturbed or mislocated during transportation. Core boxes suspected of containing low-level radioactive substances will be labeled with a "White I" radioactive label. Core boxes suspected of containing volatile organic or mixed substances will be labeled with a Department of Transportation "Other Regulated Material Class E" (ORM-E) label (see SOP FO 10, Receiving, Labeling, and Handling Environmental Materials Containers). If the suspected contamination is mixed substances, the core box will also be marked with the words "SUS RAD" for suspected radioactive contamination.

Core boxes suspected of containing radioactive and/or hazardous substances will be stored in a facility designated for potentially contaminated core. All other core boxes will be stored at the main core storage facility at RFP.

70 DOCUMENTATION

A permanent record of the implementation of this SOP will be kept by documenting all information required by the SOP on the Borehole Log Form (Form GT 1A) or on the Borehole Log for Geotechnical Operations Form (Form GT 1C). Drilling activities will also be documented on the hollow-stem auger or rotary and core drilling Field Activities Report Forms (see SOP GT 2, Drilling and Sampling Using Hollow-Stem Auger Techniques, and SOP GT 4, Rotary Drilling and Rock Coring).

The logger will primarily be responsible for each aspect and each procedure.

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